Beyond a CSR context towards pluralism in SLCA: exploring alternative social theoretical perspectives

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Abstract:

Most current efforts in social life cycle assessment (SLCA), and in particular the UNEP/SETAC guidelines, have corporate social responsibility (CSR) as underpinning theoretical perspective. However, over 50 years of studies on CSR suggest that the companies themselves have benefitted more than has society. CSR has therefore been criticised for legitimising and consolidating the power of large corporations. In response to this critique and since the social dimension of product life cycles is broader than the corporate perspective, we explore alternative theoretical perspectives that can inform SLCA. Two alternatives not departing from a corporate worldview are the theory of ecologically unequal exchange (TEUE) and actor-network-theory (ANT). TEUE highlights inequalities between different actors along product chains as manifested in today's international trade, in particular between high- and low-income countries (Hornborg 2009). ANT is a descriptive approach for mapping networks of relationships between both actors and material (both technological and natural) entities (Latour 2005). Here, we explore a number of case studies informed by TEUE and ANT in order to identify the contribution of these alternative perspectives to SLCA. The covered cases include studies of airbag systems comparing health impacts mitigated by these devices to health impacts caused during their life cycle and cocoa supply chains through a north-south perspective. The analysis shows that these alternative perspectives add to the current SLCA framework in that they enable description of phenomena and issues hitherto uncovered by it. We go on to discuss the difference between description and assessment in SLCA and argue for greater pluralism in the theoretical and methodological approach to SLCA.

***Keywords**: Social life cycle assessment, theory of ecologically unequal exchange, actor network theory, product chain organisation study, corporate social responsibility.*

Introduction

Most current efforts in social life cycle assessment (SLCA), and in particular the UNEP/SETAC guidelines, have corporate social responsibility (CSR) as underpinning theoretical perspective. The basis in CSR is reflected in, for example, the similarity of key terminology (e.g. stakeholder as in stakeholder categories). CSR is a corporate self-regulatory mechanism that urges companies to go beyond self-interest and beyond legal requirements regarding ethical, environmental, and social standards. Although CSR is a useful and legitimate response to the sustainability challenges facing companies, there are also limitations to what CSR can achieve. Over 50 years of studies on CSR suggest that the companies themselves have benefitted more than has society at large (Banerjee 2014). In short, CSR has been criticised for legitimising and consolidating the power of large corporations and for advancing sustainability efforts that benefit the companies and not necessarily sustainability at large.

Taking one step back, one may contemplate what the word 'social' means. What does it mean when some activities have a 'social dimension'? There is no one simple answer to these questions. According to the Oxford English Dictionary, social science is the scientific study of human society and social relationships. It covers a broad range of fields, not only sociology but also political science, economics, anthropology, law, among others. Ultimately, one also needs to clarify the ways in which 'the social' relates to life cycle analysis.

The social sciences differ greatly from the natural sciences in that there are few, if any, genuine law-like causal regularities that govern social phenomena (Gorton 2006). This lack is sometimes explained by the complexity of human behaviour and the social world, and there is presently no agreement about the proper approach to investigating the social world. This is reflected by the methodological pluralism in social inquiry (Gorton 2006). Kauffmann (2009) concludes that "methodological pluralism is a necessary characteristic of sustainability science as a whole". Thus, we argue that a social perspective on products does not have to be limited to a social description determined by a corporate perspective and that the many facets of the 'social' require greater methodological pluralism in the field of SLCA. Here, we explore two approaches, each theoretically informed from different fields within the social sciences. We also provide some contrasting observations on these studies had conventional SLCA (i.e. following the UNEP/SETAC guidelines) been used.

Variations on social product studies

In our research, our focus has been on conducting socially relevant life cycle studies. In doing so, we have had to depart from the UNEP/SETAC guideline for SLCA. Two theoretical bodies have been particularly useful for informing our SLCA: the theory of ecological unequal exchange (TEUE) and actor-network-theory (ANT).

The theory of ecological unequal exchange (TEUE) describes the unequal material exchange relations and consequent ecological interdependencies within the world economy, all of which are fundamentally tied to wide disparities in socio-economic development and power embedded within the global system (Hornborg 2009). It has mainly been applied to the ecological analysis of trade between countries, but some analyses at product level using LCA can also be found. Here, we draw on TEUE to look at the balance of social impacts in terms of DALYs over the production and the consumption system.

Actor-network-theory (ANT) is an approach for exploring how networks are built or assembled and maintained to achieve a specific objective (Latour 2005). ANT is not so much a theory of the social as it is a suggestion for how to study the social. One of the characteristics for ANT is that 'actors' denote both human and non-human actants. ANT was originally developed within the social studies of science and technology and has come to be applied in many fields and disciplines. Product Chain Organization (PCO) is a life-cycle-oriented application of ANT used for the study of the actor-networks shaping product flows (Baumann 2012).

We have applied TEUE and ANT to several product studies. In the following, we illustrate their respective contribution to social product studies by describing their application to two studies in greater detail. The TEUE-informed study analyses an airbag system (in Baumann et al. 2013); the ANT-based study analyses cocoa supplies (in Afrane et al. 2013). Other examples for TEUE include the social assessments of catalytic converters and of wedding rings (in Arvidsson et al. 2018). Other ANT-based studies of product flows consider a shrimp production and consumption system (in Camacho Otero & Baumann 2016) and rare earth metals for magnets in electric vehicles (in Baumann 2012).

Airbag

In this product study, the company at hand was interested in a SLCA addressing the social rationale for one of the key products. Given the product being an airbag system, and the purpose of an airbag system is to prevent injuries and fatalities, we sought relevant ways for describing such impacts. Most cars are now fitted with a number of airbags. The number differs for each car model and maker. Some cars have upto 23 airbags to protect the driver and passengers in frontal and side collisions; many have fewer. An airbag system consists of a number of sensors in a vehicle send information to an electronic control unit (ECU), which in the event of a collision triggers various firing circuits to deploy one or more airbag modules. Such airbag modules are deployed through a pyrotechnic process.

In our study, we described one airbag module. Eventually, we came to use DALY (disability adjusted life-years) as indicator since it covered both injuries and lives lost during production as well as injuries and lives saved during use. We found that the largest DALY losses stemmed from electricity production, followed by toxic emissions in mainly electronic productions. The mining of metals contributed with the lowest DALY loss in the product system. Since the DALY saved were about 300 times higher than the DALY losses for a single airbag module, the results indicated that the purpose of an airbag system, which is to save lives and prevent injuries, may be socially justified.

Drawing on TEUE, we analysed the distribution of DALY along the product life cycle. This analysis pointed to an unequal distribution of the benefits and the harms of airbag systems. The greatest benefits are to be found for users of expensive cars with many airbags, mainly in Western countries, whereas the majority of the harms are to be found with workers in electronic and energy (coal) production in mainly developing countries.

Had conventional SLCA methodology been applied, it is likely that such a study would have explored the negative impacts in the production of an airbag system. Thereby, the socially unequal distribution of benefits and harms related to the airbag system would have been difficult to identify.

Cocoa

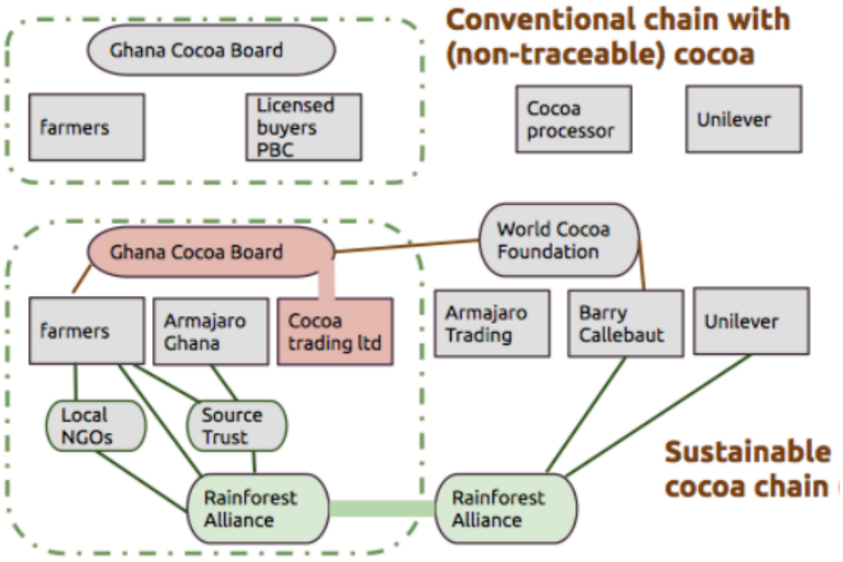
The context for our study was that in 2010, Unilever committed to source all its cocoa from sustainable sources within 5 years. Since a company like Unilever procures its chocolate from wholesalers, it has no direct contact with farmers, and certification provides thus a means of assurance that farmers adhere to a number of good agricultural practices. Here, Unilever had partnered with Rainforest Alliance.

In our study, we described the network of actors in cocoa product chains and could explore the effect of introducing new actors related to certification to a conventional product chain. For practical reasons, the study was geographically limited to cocoa grown in Ghana, the world's second largest producer of cocoa.

Product chain actors were identified through multiple sources and on-site in Ghana. The interviews covered each actor's role and relationships, which enabled the mapping of the PCOs. Additionally, qualitative interviews explored actors' views and perspectives on sustainability and certification in order to understand for premises for sustainability in the chain. Visits to three farming regions provided a rich and diverse sampling of viewpoints and farming practices.

We found that the social organisation for a certified cocoa chain to be considerably more complex than the conventional chain since it includes more actors (figure 1). The diversity of actors in the cocoa industry is such that a multinational corporation is linked to numerous smallholder farmers, who typically operate on approximately 1 ha of land, are often poor and illiterate, and production is often a family effort. In Ghana, there are also governmental bodies regulating the national cocoa industry. In this case, certification with Rainforest Alliance came with training for the farmers. Such training is not always the case in certification but was made part of it to secure more sources to sustainable cocoa for Unilever.

Figure 1: Overview of product chain organisation for conventional and certified cocoa chains.



The PCO also showed that sustainability views are not uniform in the product chain (see table 1). While there is strong agreement on certain issues, views differ substantially on others or are limited to few actors.

Table 1: Viewpoints of cocoa chain actors.

Strong agreement among chain actors	Views expressed by only certain chain actors	Conflicting views among chain actors
Deforestation Soil Depletion Farmer Income Productivity Community Development Lack of knowledge and education	Climate change. Only farmers bring this up as the major environmental problem. Landowner system and conflict of land. Only Ghanaian governmental bodies bring this up. Illegal logging, illegal mining, slash and burn. Several Ghanaian actors bring up these problems.	Food safety issues – some actors see this as an important concern while others believe it has been tackled well. Child labour concerns – some farmers and other supply chain actors believe child labour and trafficking has been addressed and is being eliminated through certification. Others believe it is still a problem for the cocoa sector in some cases.

For most cocoa chain actors, environmental issues were secondary. The exception were the farmers who realised the reality of climate change and its adverse impact on cocoa farming, and Rainforest Alliance which also had strong views on deforestation and biodiversity. Many had positive views on certification, but negative concerns were also expressed. Some actors were confused about the many, competing certification schemes (e.g. RA, UTZ and Fairtrade) and showed resistance to the entailing administrative work of handling multiple certification schemes. More specifically, the governing cocoa bodies in Ghana suggested that sustainability could be improved without certification and preferred sustainability efforts to be organised collaboratively.

The switch from conventional to traceable, certified cocoa sources at a multinational corporation led to changes in the structure of the cocoa industry in Ghana. The analysis brings to light the multiple and sometimes conflicting views on the development of the product chain towards greater sustainability. Perhaps most significant among these are the concerns expressed by Ghanaian governmental bodies for the socio-

economic development of the cocoa industry and the limits to their self-determination related to the format given by certification schemes advanced by multinational corporations.

Had conventional SLCA methodology been applied, it is likely that quantitative indicators would have been used. Moreover, such a study would likely have focused on stakeholders to the certification initiative at hand, thereby producing a positive but limited picture of its effects. Thereby, such a study would have neglected the multiplicity of actors' viewpoints on sustainability, certification schemes and tensions on the ways to achieve sustainable socio-economic development for smallholder farmers.

Conclusions and future developments

The analysis shows that SLCA informed by TEUE and ANT add to the current SLCA framework in that description of phenomena and issues hitherto uncovered by is made possible. Greater methodological pluralism in SLCA would produce richer descriptions and help our understanding of how the social 'fabric' shapes a product chain. Whether people in the product system should be considered actors in their own right or stakeholders to a CSR initiative marks a telling difference in our approaches compared to conventional SLCA. Also, our analysis recognizes a distinction between social description and social sustainability assessment. Given the complexity of human behaviour and the social world (Gorton 2006), we find that the field of SLCA would benefit from greater methodological pluralism and richer descriptions with multiple social perspectives provide better 'roadmaps' for advancing sustainability than assessment made from a unilateral perspective. This could possible sensitize corporations and CSR professionals to the many (sometimes conflicting) interests in a product chain.

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